DOCUMENT RESUME

ED 067 399 TM 001 794

AUTHOR	Oles, Henry J.; Bolvin, John O.
TITLE	The Reliability and Usability of a Semantic Differential Attitude Scale with Third through Fifth Grade Students.
PUB DATE	72
NOTE	44p.; Paper presented at the convention of National Council on Measurement in Education, Chicago, Ill., 1972. Based on portion of Ph.D. Dissertation, Univ. of Pittsburgh
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	*Attitude Tests; *Componential Analysis; *Elementary School Students; Factor Analysis; Item Analysis; *Questionnaires; *Rating Scales; Statistical Analysis; Test Reliability
IDENTIFIERS	*How I Feel Test

ABSTRACT

An attitude questionnaire, administered to third, fourth, and fifth grade students, is discussed. The questionnaire, "How I Feel," was composed of a packet of directions to the teacher, directions to the student with sample questions, and 11 concepts, each of which was evaluated by six bipolar adjective pairs that were chosen because of their relevance to the type of information desired by the researchers and by their high loading on Osgood's evaluative dimension. Nine of the concepts were scored whereas two served as validity-type scales to identify those students who did not understand what they were asked to do or who may have filled in the blanks with random checks. The students to whom the questionnaire was administered were 238 who were attending a school using Individually Prescribed Instruction (IPI). Each of the individual bipolar adjective pair scales was scored along a five-point continuum. The questionnaire was administered again to 201 of the original subjects seven months following the first administration, using the same instructions but a different "special" teacher. Results showed the coefficient alpha reliabilities for the individual scales ranged from .86 to .92. A factor analysis of the entire instrument indicated that the six bipolar adjective pairs used to evaluate the nine concepts were essentially measuring the same factor and could therefore be summed, thus reducing the original 54-items to 9 items. The test-retest reliabilities for six of the nine questions ranged from .35 to .44; they were considerably lower for the other three questions. Tables present the data, and appendixes provide the questionnaire and related materials. (DB)

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY

ED 067699

THE RELIABILITY AND USABILITY OF A SEMANTIC DIFFERENTIAL ATTITUDE SCALE WITH THIRD THROUGH FIFTH GRADE STUDENTS*

Dr. Henry J. Oles
Southwest Texas State University

Dr. John G. Bolvin
Learning Research and Development Center
University of Pittsburgh

A Paper Presented To the 1972 Convention of the
National Council on Measurement in Education
Chicago, Illinois

*Based upon a portion of a PhD dissertation completed at the University of Pittsburgh, Pittsburgh, Pa.

FILMED FROM BEST AVAILABLE COPY

TM 001 794

The semantic differential has become a very popular and useful measurement technique in psychological and educational research for the study of attitudes. However, it has seldom been used with children of elementary school age, primarily because it was intuitively assumed that they would not be able to understand how to answer the questions which would result in unreliable and therefore useless results.

The attitude questionnaire used in this study, "How I Feel" was a specially adapted version of a semantic differential type instrument first developed and used by Research For Better Schools, Inc., of Philadelphia, Pa. Although this questionnaire was specifically tailored to gather information about a particular instructional program, its form could easily be generalized. The "How I Feel" questionnaire (Appendix A) was composed of a packet of directions to the teacher, directions to the student with sample questions, and eleven concepts, each of which was evaluated by six bipolar adjective pairs that were chosen because of their relevance to the type of information the researchers wished to gather and their high loadings on Osgood's (Osgood, 1967) evaluative dimension. Nine of the concepts were actually scored while two served as validity type scales to identify those students who did not understand what they were asked to do or who may have filled in the blanks with random checks. The two validity questions were: 1. Being Punished For No Reason Is; 2. Being Rewarded For Doing Something Well Is. Students who answered the first question with predominantly positive answers or the second question with predominantly negative answers would have been eliminated. None of the students were dropped for this reason. Several students skipped items, but they were able to complete the questionnaire the following day.

The questionnaire was administered by a 'special' teacher to 238 third, fourth, and fifth grade students in an elementary school using Individually Prescribed Instruction (IPI), a program developed by the Learning Research and Development Center of the University of Pittsburgh. The teacher carefully read the directions to the students, answered their questions, and observed their completion of the questionnaire. To help prevent students from answering the questions in a way they felt their teacher would expect them to respond, they were clearly told both orally and in the printed instructions that their teacher or principal would not see their papers. The regular classroom teacher was asked to leave the room until her students completed the scale.

Each of the individual bi-polar adjective pair scales was scored along a five point continuum. One point was given to the most negative response and five points to the most positive. In an attempt to prevent response patterning, the direction of the scales as well as the order of the bipolar adjective pairs were randomly assigned.

Table 1 presents the coefficient alpha, concept mean, sum of the item variances, and total variance for each of the nine concepts scored. The values of coefficient alpha range from a low of .74 to a high of .92. Table 2 lists reliability data for the instrument first looking at it as one 54-item test and then after collapsing over scales within concepts, viewing it as one 9-item test. The subjects in this case are separated by grade. As expected, coefficient alpha is considerably higher for the 54-item test than for the summation 9-item test. With the exception of the third grade 9-item coefficient alpha, the values are very similar for each of the three grades.

Table 3 lists the total mean (mean of all the ratings for all concepts) sum of the item variances, and the total variance for each the 54-item test and the 9-item test for all three grades. There is relatively little difference among the values across grades except that third grade students exibited slightly

more positive attitudes, a lower sum of item variances, and a higher total variance than fourth or fifth grade students.

Appendices B, C, and D present the means and standard deviations, correlation matrices, factor Eigenvalues, and chi square tests of sphericity from principal components analysis, and rotated factor patterns for the six scales that evaluate each of the nine concepts that compose the student attitude questionnaire. A review of the means in Appendix B shows that for the first seven questions, all of the means are above, and in many cases, considerably above the mean or neutral point for the scale. This can be interpreted to indicate that IPI students generally display very positive attitudes, as measured by this instrument, toward school, their math teacher, IPI related activities in math, and themselves. They feel that these activities are generally good, useful, honest, interesting, fair, and happy. The means for the last two questions are considerably lower, which may show that the students feel that failing a math CET (test) is bad, useless, and sad. However, they are not sure whether or not it is honest or dishonest or fair or unfair. All of the means for Question 9, Copying Workpage Answers From the Key, are below the neutral point.

A general rule of thumb in factor analysis is to consider primarily only those factors with Eigenvalues greater than 1 for interpretation through factor rotation. Appendix C shows that the scales for 8 out of 9 of the concepts had only one Eigenvalue greater than 1. In each case, the first principal components factor accounted for from 44.4 to 71.9% of the variance, which indicates that the scales share much of the variance or that they have a common factor. Again, this would be expected since all of the scales were selected because they shared high loadings on the evaluative dimension in previous research.

In an attempt to gain a better understanding of the factorial composition of the scales, other criteria including the factor's percent trace contribution, and its chi square for significance were considered in addition to the factor's Eigenvalue when deciding whether or not to preserve a factor for rotation. In

each case, enough factors to account for 70 to 80% of the variance were rotated. This procedure is supported by Lohnes (1966), who warns that there is probably greater danger in underfactoring than in overfactoring.

Appendix D presents the rotated factor patterns for the number of factors selected from principal components analysis for each concept except number seven, in which case the first principal components factor accounted for 71.9% of the variance, which indicated that rotation with additional factors would not be helpful. As expected, after reviewing the relatively high intercorrelations among the scales and the amount of variance accounted for by the first principal components factor, it was difficult to develop a clear interpretation of the rotated factor patterns. The following list of names were assigned to scales that had consistently high loadings on selected factors in an attempt to attach some interpretive meaning to the rotated factors.

1. General Evaluative Factor	For various concepts, all six scales had high loadings
2. Feeling or Emotional Tone	Usually, high loadings were found on the good-bad, happy-sad, and interesting-boring scales
3. Moral Judgement	Honest-dishonest and fair-unfair
4. Personal Interest	Interesting-boring and happy-sad
5. Utility	Useful-useless

A principal components analysis with varimax rotation was also conducted on the questionnaire viewing it as one 54-item test and completely disregarding the nine subsections. Appendix E shows the Eigenvalues, percent trace and chi-square values from principal components analysis for the thirteen factors that had Eigenvalues greater than one. The first factor accounts for 21.0% of the variance while the 13th accounts for only 1.9%. These thirteen factors were subject to varimax rotation. The resulting factor pattern shown in Appendix F clearly shows that the test divides itself into nine subtests. The six bi-polar adjective pairs for each subtest or concept generally loaded on the same factor while the nine subtests with their associated adjective pairs loaded on different factors. For example, looking at the rotated factor pattern in

Appendix F, the six bipolar adjective pairs for question one all had high loadings only on factor VIII. The six bipolar adjective pairs for question two all had their highest loadings on factor VII. This pattern apparently indicates that the six bipolar adjective pairs are measuring essentially the same factor while the individual concepts are measuring different factors.

Because the six bipolar adjective pairs are relatively unifactorial for each concept and the concepts themselves each load on a different factor as shown in the preceeding analyses, the six ratings for each concept were summed. These summations were then analyzed as though they were obtained from one, 9-item test.

Tables 4, 5, and 6 present the means, standard deviations, and correlation matrix, Eigenvalues, percent trace, and chi-square values from principal components analysis for the first five factors, and the varimax rotation of those factors. The intercorrelations in Table 4 are all relatively low. The highest correlation (0.59) is between concepts or variables 4, Taking A Math CET Is, and 5, IPI Math Class Is.

Table 5 lists the result of a principal components analysis on the correlation matrix for all nine variables. The first three factors extracted each had an Eigenvalue greater than one, and together they accounted for 61.4% of the variance. Two additional factors, 4 and 5, accounted for another 17% of the variance.

Varimax rotations were performed seeking three to seven rotated factors. The results of a five factor rotation (Table 6) produced communalities ranging from 0.67 to 0.95 indicating that five factors accounted for most of the variance in each test. The five factor rotation also produced the most interpretable factor pattern with the least number of factors.

FACTOR I: General School Evaluative Factor (28% of the variance)

Five concepts had medium to high loadings on this factor. They included:

Working on Math Problems Is; My School Is; Taking A Math CET Is; My Math Teacher Is.

FACTOR II: Propensity To Copy From Key (13% of the variance)

One concept, Copying Work Page Answers From The Key Is, had a high positive loading (.896) on this factor indicating that students who had high scores on this factor had positive attitudes (good, useful, honest, etcetra) toward copying. Other loadings, although not particularly high, indicated that a student who had a high score on the copying factor also was likely to have a positive attitude toward taking a math CET. He was likely to have negative attitudes toward working on math problems, his school, and his math teacher.

FACTOR III: Independent Activities (12% of the variance)

One concept, Scoring My Own Math Work Pages, had a high negative loading (-.907) on this factor indicating that students with high scores on this factor had negative attitudes toward scoring their own work pages. They also showed negative attitudes toward themselves and taking math CET's.

FACTOR IV: Unnamed (15% of the variance)

Students with high scores on this factor had negative attitudes toward their math teachers, themselves, their school and IPI math class.

FACTOR V: Failure (12% of the variance)

Students with a high score on this factor expressed negative attitudes toward failing a math CET and working on math problems.

A five element factor score vector was computed from the rotated factor pattern matrix for each of the subjects for use in subsequent analysis. Cooley and Lohnes (1971) suggest that the use of factor scores in place of raw scores can lead to more understandable results.

The questionnaire was again administered to 201 of the original 234 subjects in December, 1971, seven months after the first administration using the same instructions but a different 'special' teacher. Table 7 presents the test-retest reliability coefficients for the summation scores for each question. Six of the coefficients range from .35 to .44, which are surprisingly high considering the instability of elementary students' attitudes and the long time lapse. The lower reliability coefficients for the remaining three questions were intuitively predictable. The reliability coefficient for My School Is was .18. There had been a number of changes in the school (new teachers, new rules, etc.) since the test was first given. Overall, the students had a slightly more negative opinion of their school in December than they had in May. The correlation for My Math Teacher Is was essentially zero (.08). All of the students had new math teachers. The correlation for Copying Work Page Answers From The Key Is was also zero (.04). As a result of a research study completed at this school after the first administration of the attitude questionnaire which showed that the vast majority of the students were indeed misusing self-scoring or copying work page answers from the key, the teachers and principal made a continuing effort since September, 1971, to inform the students of the necessity of proper self-scoring and to detect improper self-scoring when it occurred. The students' attitudes toward improper self-scoring were slightly more negative on the second administration.

CONCLUSIONS

The semantic differential questionnaire used in this study with third, fourth, and fifth grade students was able to collect a relatively large amount of data in a reasonable period of time that could be analyzed by a variety

of readily available "package" computer programs. The coefficient alpha reliabilities for the individual scales ranged from .86 to .92. A factor analysis of the entire instrument indicated that the six bi-polar adjective pairs used to evaluate each of the nine concepts were essentially measuring the same factor and therefore could be summed, thus reducing the original 54-item questionnaire to a 9-item questionnaire. The entire questionnaire was again administered to the same students seven months later during a new school year. The test-retest reliabilities for six of the nine questions ranged from .35 to .44. The reliability coefficients for the other three questions were considerably lower. However, these lower reliability coefficients could be explained by actual changes that had occurred during the waiting period.

This study has shown that the semantic differential, properly presented, can be a reliable and usable measure of attitudes in students as young as third grade.

TABLE 1

COEFFICIENT ALPHA, TEST MEAN, SUMS OF THE ITEM VARIANCES, AND TOTAL VARIANCE FOR EACH OF THE NINE SUBTESTS THAT COMPRISE THE SEMANTIC DIFFERENTIAL

Concept	Coefficient Alpha	Mean	Total Variance	Sum of Item Variances
1 Working On Math Problems Is . .	.85	21.24	34.72	10.19
2 My School Is	.85	24.92	27.62	8.07
3 Scoring My Own Math Work Pages Is	.82	25.52	19.40	6.25
4 Taking A Math CET Is	.84	25.48	21.28	6.48
5 IPI Math Class Is	.88	24.12	34.08	9.15
6 I Am	.74	25.21	16.43	6.26
7 My Math Teacher Is	.92	25.14	37.06	8.67
8 Failing A Math CET is	.79	13.07	27.11	9.34
9 Copying Work Page Answers From The Key Is	.91	10.72	41.50	10.10

TABLE 2

COEFFICIENT ALPHA FOR THE SEMANTIC DIFFERENTIAL VIEWED AS BOTH A 54-ITEM TEST AND AFTER SUMMING WITHIN CONCEPTS AS A 9-ITEM TEST FOR GRADES THREE, FOUR, AND FIVE

	Coefficient Alpha	
Grade	Raw Scores (54 Items)	Summed Scores (9 Items)
Third	.86	.54
Fourth	.92	.72
Fifth	.91	.71

TABLE 3

MEANS, SUM OF ITEM VARIANCES AND TOTAL VARIANCE FOR THE SEMANTIC DIFFERENTIAL, GRADES THREE FOUR, AND FIVE

Grade	Number Of Items	Mean	Total Variance	Sum of Item Variances
Third	54	198.18	502.69	81.71
Third	9	198.18	502.69	262.96
Fourth	54	195.59	708.76	71.14
Fourth	9	195.59	708.76	257.37
Fifth	54	193.36	636.27	70.49
Fifth	9	193.36	636.27	241.85

TABLE 4

MEANS, STANDARD DEVIATIONS, AND CORRELATION MATRIX FOR SUMMATION SCORES FOR EACH OF NINE CONCEPTS THAT COMPRISE THE SEMANTIC DIFFERENTIAL

N = 234

Concepts	1	2	3	4	5	6	7	8	9
Means	21.24	24.92	25.52	25.47	24.12	25.21	25.14	13.07	10.72
S.D.	5.89	5.26	4.40	4.61	5.84	4.05	6.09	5.21	6.44
Intercorrelations									
1 Working On Math Problems ..	1.00	0.48	0.26	0.40	0.49	0.03	0.37	0.07	-0.20
2 My School Is		1.00	0.27	0.42	0.52	0.22	0.55	-0.05	-0.15
3 Scoring My Own Math Worksheets Is			1.00	0.31	0.24	0.29	0.21	0.00	-0.01
4 Taking A Math CET Is				1.00	0.59	0.16	0.22	0.08	0.04
5 IPI Math Class Is.					1.00	0.19	0.50	0.00	-0.05
6 I Am						1.00	0.30	-0.07	0.03
7 My Math Teacher Is							1.00	0.02	-0.16
8 Failing A Math CET Is								1.00	0.22
9 Copying Work Page Answers From the Key Is									1.00

TABLE 5

PRINCIPAL COMPONENTS ANALYSIS OF THE SUMMATION SCORES FOR EACH OF THE NINE CONCEPTS OF THE SEMANTIC DIFFERENTIAL

Factor	Eigenvalue	Percent Trace	Cum Percent	N.D.F.	Chi-Square
1	3.1224	34.7	34.7	36	502.43
2	1.2756	14.2	48.9	28	192.29
3	1.1260	12.5	61.4	21	139.30
4	0.8598	9.6	70.9	15	87.89
5	0.8045	8.9	79.9	10	61.27

TABLE 6

ROTATED FACTOR PATTERN FOR SEMANTIC DIFFERENTIAL SUMMATION SCORES

Concept	FACTORS I	II	III	IV	V	h^2
Working On Math Problems Is	0.694	-0.382	-0.171	0.027	-0.202	.698
My School Is	0.674	-0.211	-0.028	-0.411	0.015	.669
Scoring My Own Math Worksheets	0.201	-0.066	-0.907	-0.155	-0.037	.892
Taking A Math CET Is	0.794	0.236	-0.292	0.070	0.041	.778
IPI Math Class Is	0.839	0.037	-0.009	-0.225	0.046	.759
I Am	-0.011	0.189	-0.360	-0.788	0.146	.808
My Math Teacher Is	0.454	-0.268	0.112	-0.702	-0.146	.805
Failing A Math CET Is	0.007	0.156	-0.024	0.029	-0.958	.945
Copying Work Page Answers From The Key Is	-0.016	0.896	0.034	0.008	-0.179	.836
% Trace	28%	13%	12%	15%	12%	

TABLE 7

TEST RETEST RELIABILITY COEFFICIENTS FOR THE NINE CONCEPTS
THAT COMPRISE THE SEMANTIC DIFFERENTIAL QUESTIONNAIRE

Concept	Test-Retest Reliability
1. Working On Math Problems Is	.36
2. My School Is	.18
3. Scoring My Own Math Work Pages Is	.40
4. Taking A Math Test Is	.35
5. IPI Math Class Is	.43
6. I am	.44
7. My Math Teacher Is	.08
8. Failing A Math Test Is	.38
9. Copying Workpage Answers From The Key Is	.04

APPENDIX A

SEMANTIC DIFFERENTIAL ATTITUDE QUESTIONNAIRE

GENERAL DIRECTIONS TO THE TEST ADMINISTRATOR

The following points are important to insure that your efforts produce a high quality set of answers:

1. *Each child gets a booklet.*
2. *The information on the cover is to be completed by the student and/or teacher.*
3. *The General Directions are read to the pupils as they read them silently.*
4. *Instruct your pupils to answer each question.*
5. *Please read the questions to the children if they are unable to read them. You may want to pace the students by reading all the questions aloud.*
6. *You can expect about 20 minutes of time to be devoted to the pupil opinionnaire.*
7. *Copy the following, exactly as shown, on the blackboard before distributing the questionnaires to the class.*

Example:

WATCHING TV IS

HAPPY	VERY	SORT OF	NEITHER	SORT OF	VERY	SAD
SAD						GOOD
HONEST						DISHONEST

SPECIAL INSTRUCTIONS

PLEASE READ THESE DIRECTIONS TO THE PUPILS WHILE THEY READ THEM SILENTLY.

At the top of each box on the following pages, there is an incomplete statement. It looks like this:

PLAYING GAMES IS _____

In each box, there are 6 pairs of words that you can use to think about the statement at the top. Each pair of words is on a broken line, which looks like this:

PLAYING GAMES IS

NICE_____:_____:_____:_____:_____:AWFUL

Each space on the line has one or two words above it, which look like this:

PLAYING GAMES IS

NICE	VERY	SORT OF	NEITHER	SORT OF	VERY	AWFUL

You can use this line to show how your feel about the statement at the top by making an X in any one of the five spaces on the line.

If you happen to feel that PLAYING GAMES IS very NICE, make an X in the "very" space next to the word NICE, in this way:

PLAYING GAMES IS

NICE	VERY	SORT OF	NEITHER	SORT OF	VERY	AWFUL

If you happen to feel that PLAYING GAMES IS very AWFUL, make an X in the "very" space next to the word AWFUL, in this way:

PLAYING GAMES IS

NICE	VERY	SORT OF	NEITHER	SORT OF	VERY	AWFUL

Say John feels that WATCHING TV IS very HAPPY. He can show that he feels WATCHING TV IS very HAPPY by making an X in the "very" space next to the word HAPPY. Pretend you are JOHN and make an X in the "very" space next to the word HAPPY.

(After giving them time to respond, put an X in the very space on the blackboard, as shown above.)

Say John feels that WATCHING TV IS sort of GOOD. He can show that he feels WATCHING TV IS sort of GOOD by making an X in the "sort of" space near the word GOOD. Pretend you are John and make an X in the "sort of" space near the word GOOD.

(After giving them time to respond, put an X in the "sort of" space on the blackboard, as shown above.)

Say John feels that WATCHING TV IS neither HONEST nor DISHONEST. He can show how he feels by making an X in the "neither" space, halfway between the words HONEST and DISHONEST. Pretend you are John and make an X in the "neither" space, halfway between the words HONEST and DISHONEST.

(After giving them time to respond, put an X in the "neither" space on the blackboard, as shown above.)

ASK Are there any questions?

SAY We will now complete the rest of this example.

Say: John feels that WATCHING TV IS very INTERESTING. Show that he feels this by making an X in the "Very" space next to the word INTERESTING.

(DO NOT illustrate this nor the following three items. The items will serve as a pre-test to make sure the child understands the procedure. If there are any errors on the four items, his paper will not be scored.

Say: John feels that WATCHING TV IS sort of USELESS. Show that he feels this by making an X in the "sort of" space closest to the word USELESS

Say John feels that WATCHING TV IS neither fair or unfair. Show that he feels this way by making an X in the "neither" space halfway between the words FAIR and UNFAIR.

Say Now, please read the paragraph at the bottom of the page to yourself while I read it aloud.

READ After you are told to turn the page, please look at the words printed in capital letteres at the top of each set of lines. Then mark the space on the lines that best tells how you feel about the people, things, or experiences named at the top. Work at your speek but do not spend too much time thinking about each line.

Now, turn the page and begin to work.

If you happen to feel that PLAYING GAMES IS sort of AWFUL, make an X in the "sort of" space near the word AWFUL, in this way:

PLAYING GAMES IS

	VERY	SORT OF	NEITHER	SORT OF	VERY	
NICE	_____ :	_____ :	_____ :	X :	_____	AWFUL

If you happen to feel that PLAYING GAMES IS neither NICE nor AWFUL, of if neither word describes how you feel about it, make an X in the "neither" space, halfway between the words NICE and AWFUL in this way:

PLAYING GAMES IS

	VERY	SORT OF	NEITHER	SORT OF	VERY	
NICE	_____ :	_____ :	X :	_____ :	_____	AWFUL

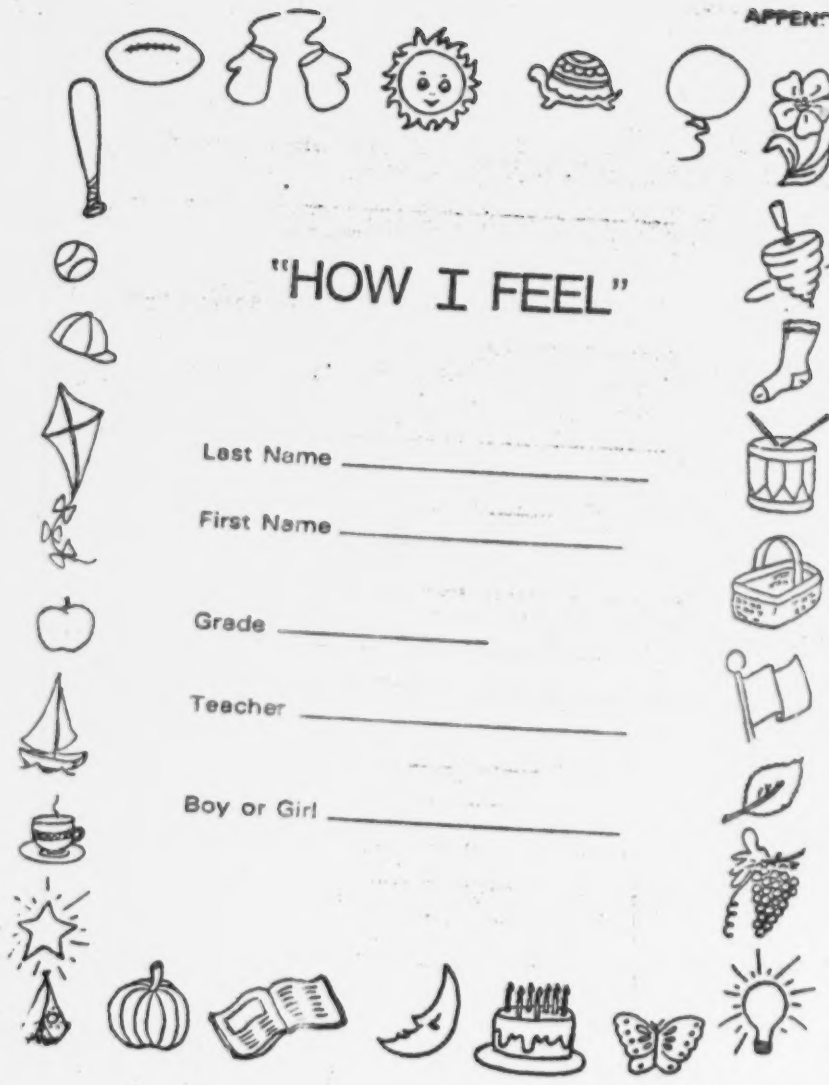
Ask Are there any questions?

Say Please turn to page 5.

Say We will now do the example shown here. Pretend that there is a boy named John who is doing this page.

WATCHING TV IS

	VERY	SORT OF	NEITHER	SORT OF	VERY	
HAPPY	_____ :	_____ :	_____ :	_____ :	_____	SAD
BAD	_____ :	_____ :	_____ :	_____ :	_____	GOOD
HONEST	_____ :	_____ :	_____ :	_____ :	_____	DISHONEST
BORING	_____ :	_____ :	_____ :	_____ :	_____	INTERESTING
USEFUL	_____ :	_____ :	_____ :	_____ :	_____	USELESS
UNFAIR	_____ :	_____ :	_____ :	_____ :	_____	FAIR



"HOW I FEEL"

Last Name _____

First Name _____

Grade _____

Teacher _____

Boy or Girl _____

DIRECTIONS TO THE STUDENT

1. This is not a test. There are no "right" or "wrong" answers to any of the questions; just answer them as carefully and honestly as you can.

2. The questions ask you to tell how you feel about many different things. Your answer to each question should tell how you feel about it.

3. Please work carefully. Do not spend a long time on any one question. Select the answer that seems best to you at the time. Please answer all the items.

4. If you are unable to read a question or if you have any questions while you are working, please raise your hand and I will come and help you.

5. Your answers will not be seen by your teacher. They are for the people who make the IPI lessons.

APPENDIX 4 continued

2

At the top of each box on the following pages, there is an incomplete statement. It looks like this:

PLAYING GAMES IS

In each box, there are 6 pairs of words that you can use to think about the statement at the top. Each pair of words is on a broken line, which looks like

PLAYING GAMES IS					
NICE	_____ :	_____ :	_____ :	_____ :	_____ AWFUL

Each space on the line has one or two words above it, which look like this:

PLAYING GAMES IS					
	very	: sort of :	neither :	sort of :	very
NICE	_____ :	_____ :	_____ :	_____ :	_____ AWFUL

You can use this line to show how you feel about the statement at the top by making an X in any one of the five spaces on the line.

3

If you happen to feel that PLAYING GAMES IS very NICE, make an X in the "very" space next to the word NICE, in this way:

PLAYING GAMES IS					
	very	: sort of :	neither :	sort of :	very
NICE	X :	_____ :	_____ :	_____ :	_____ AWFUL

If you happen to feel that PLAYING GAMES IS very AWFUL, make an X in the "very" space next to the word AWFUL, in this way:

PLAYING GAMES IS					
	very	: sort of :	neither :	sort of :	very
NICE	_____ :	_____ :	_____ :	_____ :	X AWFUL

If you happen to feel that PLAYING GAMES IS sort of NICE, make an X in the "sort of" space near the word NICE, in this way:

PLAYING GAMES IS					
	very	: sort of :	neither :	sort of :	very
NICE	_____ :	X :	_____ :	_____ :	_____ AWFUL

If you happen to feel that PLAYING GAMES IS sort of AWFUL, make an X in the "sort of" space near the word AWFUL, in this way:

PLAYING GAMES IS					
	very	: sort of :	neither :	sort of :	very
NICE	_____ :	_____ :	_____ :	X :	_____ AWFUL

4

If you happen to feel that PLAYING GAMES IS neither NICE nor AWFUL, or if neither word describes how you feel about it, make an X in the "neither" space, halfway between the words NICE and AWFUL in this way:

PLAYING GAMES IS

	very	: sort of :	neither :	sort of :	very	
NICE	_____	: _____ :	X	: _____ :	_____	AWFUL

5

Example

WATCHING TV IS

	very	: sort of :	neither :	sort of :	very	
HAPPY	_____	: _____ :	_____	: _____ :	_____	SAD
BAD	_____	: _____ :	_____	: _____ :	_____	GOOD
HONEST	_____	: _____ :	_____	: _____ :	_____	DISHONEST
BORING	_____	: _____ :	_____	: _____ :	_____	INTERESTING
USEFUL	_____	: _____ :	_____	: _____ :	_____	USELESS
UNFAIR	_____	: _____ :	_____	: _____ :	_____	FAIR

STOP! Do not turn the page.

After you are told to turn the page, please look at the words printed in capital letters at the top of each set of lines. Then, mark the space on the line that best tells how you feel about the people, things, or experiences named at the top. Work at your own speed but do not spend too much time thinking about each line.

WORKING ON MATH PROBLEMS IS

	very	: sort of :	neither :	sort of :	very	
H	BAD					GOOD
K	INTERESTING					BORING
L	UNFAIR					FAIR
J	HONEST					DISHONEST
M	HAPPY					SAD
I	USELESS					USEFUL

BEING PUNISHED FOR NO REASON IS

	very	: sort of :	neither :	sort of :	very	
K	INTERESTING					BORING
L	UNFAIR					FAIR
M	SAD					HAPPY
H	GOOD					BAD
I	USEFUL					USELESS
J	DISHONEST					HONEST

MY SCHOOL IS

	very	: sort of :	neither :	sort of :	very	
I	USEFUL					USELESS
M	SAD					HAPPY
L	UNFAIR					FAIR
J	HONEST					DISHONEST
H	BAD					GOOD
K	BORING					INTERESTING

SCORING MY OWN MATH WORK PAGES

	very	: sort of :	neither :	sort of :	very	
M	SAD					HAPPY
L	FAIR					UNFAIR
I	USEFUL					USELESS
K	BORING					INTERESTING
J	HONEST					DISHONEST
H	GOOD					BAD

8

TAKING A MATH CET IS

	very	: sort of :	neither :	sort of :	very	
K INTERESTING	_____	: _____ :	_____ :	_____ :	_____	BORING
I USEFUL	_____	: _____ :	_____ :	_____ :	_____	USELESS
M SAD	_____	: _____ :	_____ :	_____ :	_____	HAPPY
L FAIR	_____	: _____ :	_____ :	_____ :	_____	UNFAIR
J DISHONEST	_____	: _____ :	_____ :	_____ :	_____	HONEST
H BAD	_____	: _____ :	_____ :	_____ :	_____	GOOD

IN MATH CLASS IS

	very	: sort of :	neither :	sort of :	very	
K INTERESTING	_____	: _____ :	_____ :	_____ :	_____	BORING
L UNFAIR	_____	: _____ :	_____ :	_____ :	_____	FAIR
H BAD	_____	: _____ :	_____ :	_____ :	_____	GOOD
J HONEST	_____	: _____ :	_____ :	_____ :	_____	DISHONEST
M HAPPY	_____	: _____ :	_____ :	_____ :	_____	SAD
I USEFUL	_____	: _____ :	_____ :	_____ :	_____	USELESS

GO ON TO THE NEXT PAGE.

9

I AM

	very	: sort of :	neither :	sort of :	very	
J DISHONEST	_____	: _____ :	_____ :	_____ :	_____	HONEST
M HAPPY	_____	: _____ :	_____ :	_____ :	_____	SAD
K BORING	_____	: _____ :	_____ :	_____ :	_____	INTERESTING
I USELESS	_____	: _____ :	_____ :	_____ :	_____	USEFUL
H GOOD	_____	: _____ :	_____ :	_____ :	_____	BAD
L UNFAIR	_____	: _____ :	_____ :	_____ :	_____	FAIR

MY MATH TEACHER IS

	very	: sort of :	neither :	sort of :	very	
H BAD	_____	: _____ :	_____ :	_____ :	_____	GOOD
L FAIR	_____	: _____ :	_____ :	_____ :	_____	UNFAIR
J HONEST	_____	: _____ :	_____ :	_____ :	_____	DISHONEST
M SAD	_____	: _____ :	_____ :	_____ :	_____	HAPPY
I USEFUL	_____	: _____ :	_____ :	_____ :	_____	USELESS
K INTERESTING	_____	: _____ :	_____ :	_____ :	_____	BORING

GO ON TO THE NEXT PAGE.

BEING REWARDED FOR DOING SOMETHING WELL IS

		very	:	sort of	:	neither	:	sort of	:	very	
H	HAPPY	____	:	____	:	____	:	____	:	____	SAD
K	INTERESTING	____	:	____	:	____	:	____	:	____	BORING
I	USELESS	____	:	____	:	____	:	____	:	____	USEFUL
H	BAD	____	:	____	:	____	:	____	:	____	GOOD
J	HONEST	____	:	____	:	____	:	____	:	____	DISHONEST
L	UNFAIR	____	:	____	:	____	:	____	:	____	FAIR

FAILING A MATH CET IS

		very	:	sort of	:	neither	:	sort of	:	very	
K	INTERESTING	____	:	____	:	____	:	____	:	____	BORING
J	HONEST	____	:	____	:	____	:	____	:	____	DISHONEST
M	BAD	____	:	____	:	____	:	____	:	____	GOOD
L	FAIR	____	:	____	:	____	:	____	:	____	UNFAIR
M	HAPPY	____	:	____	:	____	:	____	:	____	SAD
I	USELESS	____	:	____	:	____	:	____	:	____	USEFUL

GO ON TO THE NEXT PAGE.

COPYING WORKPACE ANSWERS FROM THE KEY IS

		very	:	sort of	:	neither	:	sort of	:	very	
I	USEFUL	____	:	____	:	____	:	____	:	____	USELESS
L	FAIR	____	:	____	:	____	:	____	:	____	UNFAIR
M	SAD	____	:	____	:	____	:	____	:	____	HAPPY
J	DISHONEST	____	:	____	:	____	:	____	:	____	HONEST
K	BORING	____	:	____	:	____	:	____	:	____	INTERESTING
H	GOOD	____	:	____	:	____	:	____	:	____	BAD

APPENDIX B

MEANS, STANDARD DEVIATIONS, AND CORRELATION MATRICES FOR EACH SET OF SCALES THAT EVALUATE EACH CONCEPT

Question 1: Working On Math Problems Is

Scales	1	2	3	4	5	6
Means	3.39	4.35	3.72	3.07	3.60	3.09
S.D.	1.38	1.20	1.19	1.58	1.24	1.18
Intercorrelations						
1. Good-Bad	1.00	0.47	0.39	0.64	0.53	0.57
2. Useful-Useless		1.00	0.37	0.38	0.41	0.42
3. Honest-Dishonest			1.00	0.43	0.53	0.41
4. Interesting-Boring				1.00	0.52	0.61
5. Fair-Unfair					1.00	0.52
6. Happy-Sad						1.00

Question 2: My School Is

Scales	1	2	3	4	5	6
Means	4.20	4.41	4.32	3.81	4.17	4.00
S.D.	1.12	1.15	0.97	1.39	1.19	1.11
Intercorrelations						
1. Good-Bad	1.00	0.41	0.49	0.63	0.61	0.63
2. Useful-Useless		1.00	0.29	0.38	0.35	0.36
3. Honest-Dishonest			1.00	0.50	0.56	0.45
4. Interesting-Boring				1.00	0.51	0.55
5. Fair-Unfair					1.00	0.62
6. Happy-Sad						1.00

Question 3: Scoring My Own Math Workpages Is

Scales	1	2	3	4	5	6
Means	4.26	4.32	4.22	3.97	4.48	4.26
S.D.	0.99	1.04	0.99	1.25	0.92	0.89
Intercorrelations						
1. Good-Bad	1.00	0.51	0.51	0.47	0.48	0.47
2. Useful-Useless		1.00	0.32	0.40	0.48	0.39
3. Honest-Dishonest			1.00	0.42	0.47	0.30
4. Interesting-Boring				1.00	0.37	0.38
5. Fair-Unfair					1.00	0.49
6. Happy-Sad						1.00

Question 4: Taking A Math CET Is

Scales	1	2	3	4	5	6
Means	4.31	4.53	4.22	4.06	4.29	4.04
S.D.	0.99	0.90	0.99	1.22	0.98	1.12
Intercorrelations						
1. Good-Bad	1.00	0.49	0.34	0.37	0.52	0.61
2. Useful-Useless		1.00	0.39	0.37	0.49	0.49
3. Honest-Dishonest			1.00	0.48	0.49	0.45
4. Interesting-Boring				1.00	0.39	0.57
5. Fair-Unfair					1.00	0.47
6. Happy-Sad						1.00

Question 5: IPI Math Class Is

Scales	1	2	3	4	5	6
Means	4.01	4.36	4.06	3.89	4.09	3.70
S.D.	1.26	1.10	1.11	1.47	1.17	1.26
Intercorrelations						
1. Good-Bad	1.00	0.50	0.61	0.68	0.63	0.67
2. Useful-Useless		1.00	0.35	0.39	0.39	0.36
3. Honest-Dishonest			1.00	0.49	0.62	0.52
4. Interesting-Boring				1.00	0.63	0.68
5. Fair-Unfair					1.00	0.62
6. Happy-Sad						1.00

Question 6: I Am

Scales	1	2	3	4	5	6
Means	4.32	4.16	4.33	3.69	4.34	4.37
S.D.	0.93	1.11	0.90	1.22	0.96	0.98
Intercorrelations						
1. Good-Bad	1.00	0.40	0.21	0.36	0.56	0.31
2. Useful-Useless		1.00	0.11	0.35	0.23	0.28
3. Honest-Dishonest			1.00	0.25	0.40	0.24
4. Interesting-Boring				1.00	0.37	0.43
5. Fair-Unfair					1.00	0.31
6. Happy-Sad						1.00

Question 7: My Math Teacher Is

Scales	1	2	3	4	5	6
Means	4.17	4.26	4.38	3.90	4.22	4.11
S.D.	1.20	1.17	1.07	1.37	1.24	1.14
Intercorrelations						
1. Good-Bad	1.00	0.71	0.72	0.69	0.78	0.65
2. Useful-Useless		1.00	0.64	0.65	0.70	0.62
3. Honest-Dishonest			1.00	0.54	0.76	0.60
4. Interesting-Boring				1.00	0.64	0.57
5. Fair-Unfair					1.00	0.62
6. Happy-Sad						1.00

Question 8: Failing A Math CET Is

Scales	1	2	3	4	5	6
Means	1.54	2.13	3.05	1.75	3.01	1.58
S.D.	1.12	1.39	1.31	1.15	1.39	1.08
Intercorrelations						
1. Good-Bad	1.00	0.47	0.18	0.57	0.21	0.74
2. Useful-Useless		1.00	0.39	0.43	0.34	0.52
3. Honest-Dishonest			1.00	0.36	0.40	0.22
4. Interesting-Boring				1.00	0.23	0.51
5. Fair-Unfair					1.00	0.20
6. Happy-Sad						1.00

Question 9: Copying Worksheet Answers From The Key Is

Scales	1	2	3	4	5	6
Means	1.55	1.81	1.49	2.22	1.54	2.11
S.D.	1.23	1.43	1.18	1.34	1.24	1.35
Intercorrelations						
1. Good-Bad	1.00	0.68	0.72	0.58	0.77	0.60
2. Useful-Useless		1.00	0.61	0.52	0.63	0.55
3. Honest-Dishonest			1.00	0.53	0.72	0.59
4. Interesting-Boring				1.00	0.52	0.73
5. Fair-Unfair					1.00	0.61
6. Happy-Sad						1.00

APPENDIX C

PRINCIPAL COMPONENTS ANALYSIS FOR EACH SET OF SCALES THAT EVALUATE EACH CONCEPT

Question 1: Working On Math Problems Is

Factor	Eigenvalue	Percent Trace	Cum Percent	N.D.F.	Chi-Square
1.	3.4256	57.1	57.1	15	535.96
2	0.7097	11.7	68.9	10	46.93
3	0.6620	11.0	80.0	6	28.96
4	0.4416	7.4	87.3	3	5.25
5.	0.4271	7.1	94.4	1	3.50
6	0.3240	5.6	100.0	0	0.01

Question 2: My School Is

Factor	Eigenvalue	Percent Trace	Cum Percent	N.D.F.	Chi-Square
1	3.4834	58.1	58.1	15	569.08
2	0.7554	12.6	70.6	10	57.34
3	0.5795	9.7	80.3	6	27.12
4	0.5048	8.4	88.7	3	13.25
5	0.3521	5.9	94.6	1	0.39
6	0.3247	5.4	100.0	0	0.01

Question 3: Scoring My Own Math Worksheets

Factor	Eigenvalue	Percent Trace	Cum Percent	N.D.F.	Chi-Square
1	3.1563	52.6	52.6	15	421.21
2	0.7254	12.1	64.7	10	29.53
3	0.6409	10.7	75.4	6	19.64
4	0.6085	10.1	85.5	3	13.28
5	0.4925	8.2	93.7	1	4.18
6	0.3764	6.3	100.0	0	0.01

Question 4: Taking A Math CET Is

Factor	Eigenvalue	Percent Trace	Cum Percent	N.D.F.	Chi-Square
1.	3.3155	55.3	55.3	15	501.38
2	0.7653	12.8	68.0	10	53.73
3	0.6520	10.9	78.9	6	31.38
4	0.5237	8.7	87.6	3	13.75
5	0.4224	7.0	94.6	1	4.34
6	0.3211	5.4	100.0	0	0.01

Question 5: IPI Math Class Is

Factor	Eigenvalue	Percent Trace	Cum Percent	N.D.F.	Chi-Square
1	3.7616	62.7	62.7	15	716.11
2	0.7352	12.3	74.9	10	85.14
3	0.5681	9.5	84.4	6	37.40
4	0.3428	5.7	90.1	3	7.97
5	0.3181	5.3	95.4	1	1.28
6	0.2741	4.6	100.0	0	0.01

Question 6: I Am

Factor	Eigenvalue	Percent Trace	Cum Percent	N.D.F.	Chi-Square
1.	2.6661	44.4	44.4	15	307.92
2	0.9893	16.5	60.9	10	62.83
3	0.8024	13.4	74.3	6	34.48
4	0.6146	10.2	84.5	3	15.89
5	0.5570	9.3	93.8	1	9.55
6	0.3706	6.2	100.0	0	0.01

Question 7: My Math Teacher Is

Factor	Eigenvalue	Percent Trace	Cum Percent	N.D.F.	Chi-Square
1	4.3114	71.9	71.9	15	988.41
2	0.4832	8.1	79.9	10	59.47
3	0.4258	7.1	87.1	6	36.59
4	0.3284	5.5	92.5	3	12.54
5	0.2372	4.0	96.5	1	0.80
6	0.2110	3.5	100.0	0	0.01

Question 8: Failing A Math CET Is

Factor	Eigenvalue	Percent Trace	Cum Percent	N.D.F.	Chi-Square
1	3.0242	50.4	50.4	15	487.20
2	1.0893	18.2	68.6	10	138.37
3	0.6530	10.9	79.4	6	62.04
4	0.5514	9.2	88.6	3	41.86
5	0.4461	7.4	96.1	1	23.11
6	0.2359	3.9	100.0	0	0.02

Question 9: Copying Worksheet Answers From The Key Is

Factor	Eigenvalue	Percent Trace	Cum Percent	N.D.F.	Chi-Square
1	4.1495	69.2	69.2	15	926.40
2	0.6588	11.0	80.1	10	95.54
3	0.4192	7.0	87.1	3	27.49
4	0.2980	5.0	92.1	3	5.13
5	0.2529	4.2	196.3	1	1.02
6	0.2216	3.7	100.0	0	0.01

APPENDIX D

ROTATED FACTOR LOADINGS FOR EACH SET OF SCALES THAT EVALUATE EACH CONCEPT

Question 1	FACTORS I	II	III	h^2
1. Good-Bad	0.786	-0.170	-0.304	.74
2. Useful-Useless	0.249	-0.200	-0.941	.99
3. Honest-Dishonest	0.181	-0.912	-0.156	.89
4. Interesting-Boring	0.843	-0.250	-0.088	.78
5. Fair-Unfair	0.485	-0.657	-0.187	.70
6. Happy-Sad	0.775	-0.252	-0.187	.70
% Trace	37.7	24.4	17.9	

Question 2	FACTORS I	II	h^2
1. Good-Bad	0.768	-0.337	.70
2. Useful-Useless	0.199	-0.960	.96
3. Honest-Dishonest	0.770	-0.044	.60
4. Interesting-Boring	0.725	-0.315	.62
5. Fair-Unfair	0.821	-0.154	.69
6. Happy-Sad	0.777	-0.233	.66
% Trace	50.4	20.2	

Question 3	FACTORS I	II	III	IV	h^2
1. Good-Bad	0.310	-0.476	-0.366	-0.438	.65
2. Useful-Useless	0.140	-0.125	-0.216	-0.926	.94
3. Honest-Dishonest	0.052	-0.902	-0.285	-0.071	.90
4. Interesting-Boring	0.192	0.216	-0.887	-0.198	.91
5. Fair-Unfair	0.447	-0.599	0.088	-0.459	.78
6. Happy-Sad	0.929	-0.123	-0.228	-0.156	.95
% Trace	22.1	18.5	24.6	20.3	

Question 4	FACTORS I	II	III	h^2
1. Good-Bad	0.828	-0.327	-0.022	.79
2. Useful-Useless	0.728	-0.133	-0.312	.64
3. Honest-Dishonest	0.148	-0.338	-0.856	.87
4. Interesting-Boring	0.124	-0.860	-0.321	.86
5. Fair-Unfair	0.624	-0.061	-0.586	.76
6. Happy-Sad	0.556	-0.699	-0.102	.81
% Trace	32.9	24.5	21.5	

Question 5	FACTORS I	II	h^2
1. Good-Bad	0.788	-0.382	.77
2. Useful-Useless	0.225	-0.968	.99
3. Honest-Dishonest	0.755	-0.167	.60
4. Interesting-Boring	0.807	-0.222	.70
5. Fair-Unfair	0.833	-0.187	.73
6. Happy-Sad	0.832	-0.154	.72
% Trace	54.5	20.3	

Question 6	FACTORS I	II	III	IV	h^2
1. Good-Bad	0.147	0.004	0.845	-0.320	.84
2. Useful-Useless	0.218	-0.023	0.181	-0.926	.94
3. Honest-Dishonest	0.133	-0.960	0.170	-0.030	.97
4. Interesting-Boring	0.837	-0.035	0.295	-0.041	.79
5. Fair-Unfair	0.216	-0.311	0.821	0.022	.82
6. Happy-Sad	0.760	-0.186	0.053	-0.323	.72
% Trace	23.5	17.6	25.6	17.8	

Question 7	UNROTATED FACTORS I	II	III	IV	V	VI
1. Good-Bad	0.899	-0.028	0.098	0.108	-0.309	-0.272
2. Useful-Useless	0.851	0.092	0.073	-0.511	0.036	-0.020
3. Honest-Dishonest	0.845	-0.423	0.075	0.098	0.296	-0.106
4. Interesting-Boring	0.801	0.501	0.203	0.199	0.162	0.030
5. Fair-Unfair	0.893	-0.190	0.111	0.065	-0.161	0.353
6. Happy-Sad	0.797	0.088	-0.596	0.047	0.016	0.015
% Trace	71.9	8.1	7.1	5.5	4.0	3.5

Question 8	FACTORS I	II	III	h^2
1. Good-Bad	0.918	-0.083	-0.007	.85
2. Useful-Useless	0.579	-0.318	-0.370	.57
3. Honest-Dishonest	0.089	-0.253	-0.911	.90
4. Interesting-Boring	0.681	0.093	-0.490	.71
5. Fair-Unfair	0.135	-0.936	-0.198	.93
6. Happy-Sad	0.866	-0.194	-0.091	.80
% Trace	40.3	19.2	20.9	

Question 9	FACTORS I	II	h^2
1. Good-Bad	0.810	-0.401	.82
2. Useful-Useless	0.763	-0.314	.68
3. Honest-Dishonest	0.818	-0.311	.77
4. Interesting-Boring	0.289	-0.899	.89
5. Fair-Unfair	0.851	-0.295	.81
6. Happy-Sad	0.425	-0.813	.84
% Trace	48.8	31.9	

APPENDIX E

PRINCIPAL COMPONENTS ANALYSIS FOR SEMANTIC DIFFERENTIAL RAW SCORES

Factor	Eigenvalue	Percent Trace	Cum Percent	NDF	Chi-Square
1	11.3462	21.0	21.0	1431	7365.98
2	4.9862	9.2	30.2	1378	5368.28
3	3.4536	6.4	36.6	1326	4560.37
4	3.1816	5.9	42.5	1275	4037.88
5	2.8295	5.2	47.8	1225	3522.56
6	2.1476	4.0	51.7	1176	3043.81
7	1.8430	3.4	55.1	1128	2714.13
8	1.6937	3.1	58.3	1081	2444.76
9	1.4982	2.8	61.1	1035	2191.21
10	1.3791	2.6	63.6	990	1974.41
11	1.1769	2.2	65.8	946	1775.02
12	1.0564	2.0	67.7	903	1622.25
13	1.0007	1.9	69.6	861	1494.18

APPENDIX F

ROTATED FACTOR PATTERN FOR ATTITUDE QUESTIONNAIRE

VIEWED AS ONE 54 ITEM SCALE

ITEMS	FACTORS I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII
Question 1 Good-Bad	.30	-.16	.07	-.08	.06	.04	.13	-.73	-.04	.10	.10	-.03	-.01
Question 1 Useful-Useless	.09	-.07	-.01	-.06	-.19	.04	.13	-.60	-.19	.07	.23	.04	.40
Question 1 Honest-Dishonest	.06	-.16	.02	-.10	.02	.03	.10	-.67	.03	-.43	.14	.19	.06
Question 1 Interesting-Boring	.24	-.08	.12	-.15	.06	.03	.19	-.71	-.15	.07	-.14	.02	-.14
Question 1 Fair-Unfair	.01	-.08	.12	-.21	.03	.01	.26	-.70	-.08	-.15	.09	-.07	-.06
Question 1 Happy-Sad	.16	-.06	.14	-.10	.10	-.05	.03	-.76	-.23	.00	-.11	-.03	.03
Question 2 Good-Bad	.19	-.06	.14	-.29	.06	-.09	.72	-.14	-.10	.02	.04	-.03	.05
Question 2 Useful-Useless	-.01	.01	.03	-.19	-.12	.07	.48	-.47	-.23	.10	-.07	.02	.46
Question 2 Honest-Dishonest	.18	-.03	.01	-.18	-.10	.04	.68	-.03	-.05	-.15	.11	.20	-.17
Question 2 Interesting-Boring	.27	-.05	.17	-.31	.03	.10	.60	-.25	-.14	.15	-.07	-.07	.00
Question 2 Fair-Unfair	.08	-.13	.08	-.24	-.03	-.08	.75	-.13	-.03	-.03	.10	.05	.02
Question 2 Happy-Sad	.16	-.05	.11	-.14	.01	-.10	.73	-.14	-.21	-.06	-.13	-.02	.08
Question 3 Good-Bad	.00	.01	.78	-.03	-.01	-.05	.08	-.12	-.15	.05	-.02	-.05	-.10
Question 3 Useful-Useless	.08	-.02	.71	-.07	-.07	-.20	.18	-.05	.01	.02	.14	-.12	-.06
Question 3 Honest-Dishonest	-.02	.01	.64	-.05	.04	.11	-.03	-.22	-.12	-.14	.10	.34	-.16
Question 3 Interesting-Boring	.18	-.08	.65	-.21	.02	-.11	.01	-.16	-.05	.13	-.11	-.06	.04
Question 3 Fair-Unfair	.02	.10	.77	.09	-.01	-.02	.05	-.00	-.02	-.05	.12	.21	.10
Question 3 Happy-Sad	.02	.01	.67	-.10	.02	-.05	.09	.09	-.14	-.15	-.30	.05	.08
Question 4 Good-Bad	.21	.03	.05	-.09	.09	-.10	.06	-.11	-.74	.05	.05	-.05	.13
Question 4 Useful-Useless	.23	.06	.06	-.02	-.09	-.01	.10	-.11	-.67	.08	.21	.00	.18
Question 4 Honest-Dishonest	.19	.05	.16	-.09	-.06	.02	.22	-.16	-.53	-.52	-.02	.08	-.21
Question 4 Interesting-Boring	.14	.02	.17	-.03	.01	-.09	.10	-.31	-.58	.01	-.08	.02	-.47
Question 4 Fair-Unfair	.15	.05	.11	-.06	.03	.00	.17	-.07	-.70	-.20	.19	-.04	.04
Question 4 Happy-Sad	.21	.01	.13	-.06	.09	.04	.12	-.11	-.76	.01	-.22	.07	-.14
Question 5 Good-Bad	.83	-.01	.02	-.22	.02	-.05	.15	-.14	-.15	.01	.01	-.03	-.01
Question 5 Useful-Useless	.51	-.05	.01	-.06	-.12	-.16	.08	-.09	-.30	.05	.48	-.04	.09
Question 5 Honest-Dishonest	.62	-.01	.01	-.19	-.10	.09	.16	-.15	-.24	-.39	.07	.03	.02
Question 5 Interesting-Boring	.70	-.01	.05	-.30	-.01	.01	.15	-.21	-.23	.12	-.09	.10	-.12
Question 5 Fair-Unfair	.67	.03	.09	-.27	-.01	-.04	.22	-.17	-.23	-.17	.05	-.04	.01
Question 5 Happy-Sad	.71	.01	.17	-.19	.07	-.09	.15	-.19	-.27	.04	-.21	.04	.01
Question 6 Good-Bad	.10	-.10	.11	-.04	.06	-.65	-.13	.11	-.08	.15	-.01	.40	.12
Question 6 Useful-Useless	.07	.13	.00	.01	-.07	-.76	.15	.03	-.01	.01	.14	-.04	-.02
Question 6 Honest-Dishonest	.05	.01	.04	-.05	-.13	-.11	.13	.03	.04	-.11	-.03	.76	-.11
Question 6 Interesting-Boring	-.05	.05	.14	-.21	-.02	-.69	-.00	-.06	.06	-.33	-.24	.12	.01
Question 6 Fair-Unfair	-.07	.02	.16	-.21	.09	-.40	.03	-.01	-.03	.11	.02	.66	.25
Question 6 Happy-Sad	-.01	-.03	.20	-.20	-.12	-.59	.21	.02	-.17	.06	.05	.14	-.23
Question 7 Good-Bad	.15	-.04	.05	-.85	-.01	-.04	.20	-.11	-.13	.04	.01	-.01	.07
Question 7 Useful-Useless	.15	-.10	.06	-.79	-.04	-.12	.19	-.11	-.08	.01	.17	.09	.14
Question 7 Honest-Dishonest	.17	-.11	.02	-.82	-.14	.04	.10	-.05	.10	-.11	.09	.13	-.05
Question 7 Interesting-Boring	.15	-.04	.11	-.71	.13	-.17	.28	-.14	-.07	.05	.02	-.04	-.04
Question 7 Fair-Unfair	.14	-.07	.05	-.83	-.03	-.02	.11	-.07	-.02	-.03	.04	-.00	-.03
Question 7 Happy-Sad	.17	-.03	.01	-.72	-.03	-.10	.20	-.16	-.07	-.05	-.17	.07	.00
Question 8 Good-Bad	.06	.15	.05	.05	.82	.02	-.04	.05	.01	-.03	-.21	.01	.02
Question 8 Useful-Useless	-.03	.11	.00	-.03	.72	-.15	-.08	-.09	.02	.11	.15	-.01	.11
Question 8 Honest-Dishonest	-.14	.03	.02	-.17	.46	.01	.03	-.12	-.16	-.06	.62	.05	-.03
Question 8 Interesting-Boring	-.04	.03	-.07	.11	.75	.05	.00	.03	-.10	.11	.11	.13	-.09
Question 8 Fair-Unfair	.01	.01	-.00	-.15	.46	-.09	.02	-.09	-.05	-.18	.32	-.23	.24
Question 8 Happy-Sad	.01	.24	-.02	.06	.81	.12	-.05	-.12	.11	-.11	-.10	-.06	.09
Question 9 Good-Bad	-.01	.88	.02	.11	.11	-.04	-.01	.01	-.01	-.11	-.04	-.08	.08
Question 9 Useful-Useless	.01	.78	.05	.13	.09	.01	-.08	.09	.00	-.08	.01	.03	.16
Question 9 Honest-Dishonest	-.01	.83	.03	.03	.09	-.09	.02	.05	-.15	-.05	-.01	.12	-.06
Question 9 Interesting-Boring	-.05	.78	-.02	.02	.01	-.02	-.07	.06	.05	.21	.11	.02	-.13
Question 9 Fair-Unfair	.03	.82	.03	.03	.22	-.05	-.07	.09	-.06	-.11	-.13	-.03	-.02
Question 9 Happy-Sad	-.01	.84	-.07	.01	.03	-.00	-.05	.05	.05	.18	.05	-.03	-.04